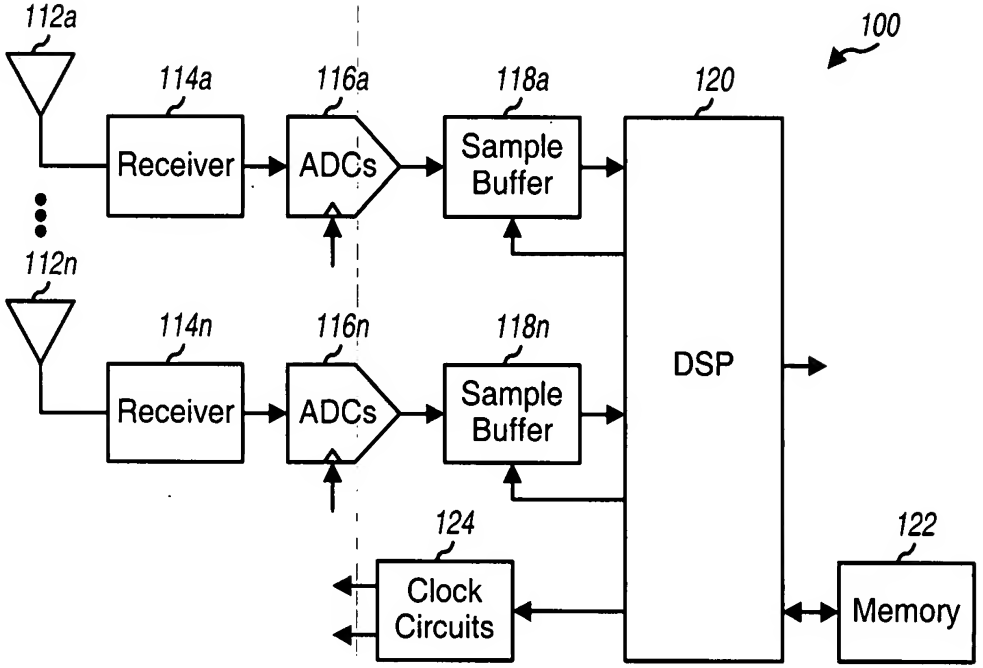

FIG. 1

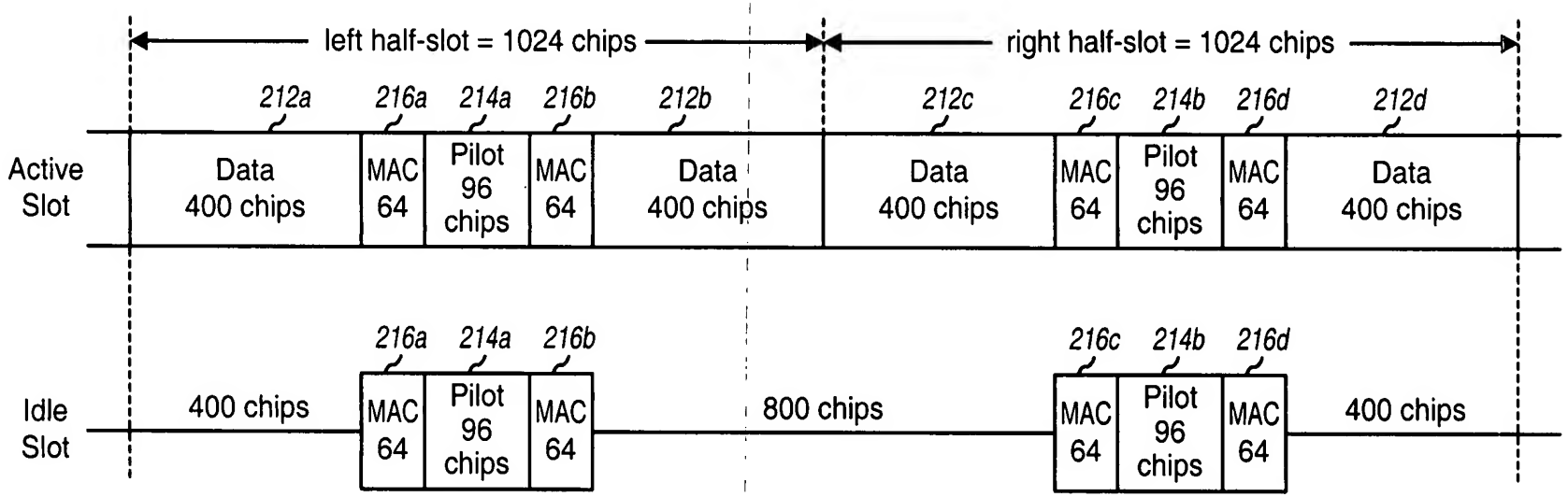
left half-slot = 1024 chips
right half-slot = 1024 chips
212a
216a
214a
216b
212b
212c
216c
214b
216d
212d
Active Slot
Data 400 chips
MAC 64
Pilot 96 chips
MAC 64
Data 400 chips
Data 400 chips
MAC 64
Pilot 96 chips
MAC 64
Data 400 chips
Idle Slot
400 chips
MAC 64
Pilot 96 chips
MAC 64
800 chips
MAC 64
Pilot 96 chips
MAC 64
400 chips

FIG. 2

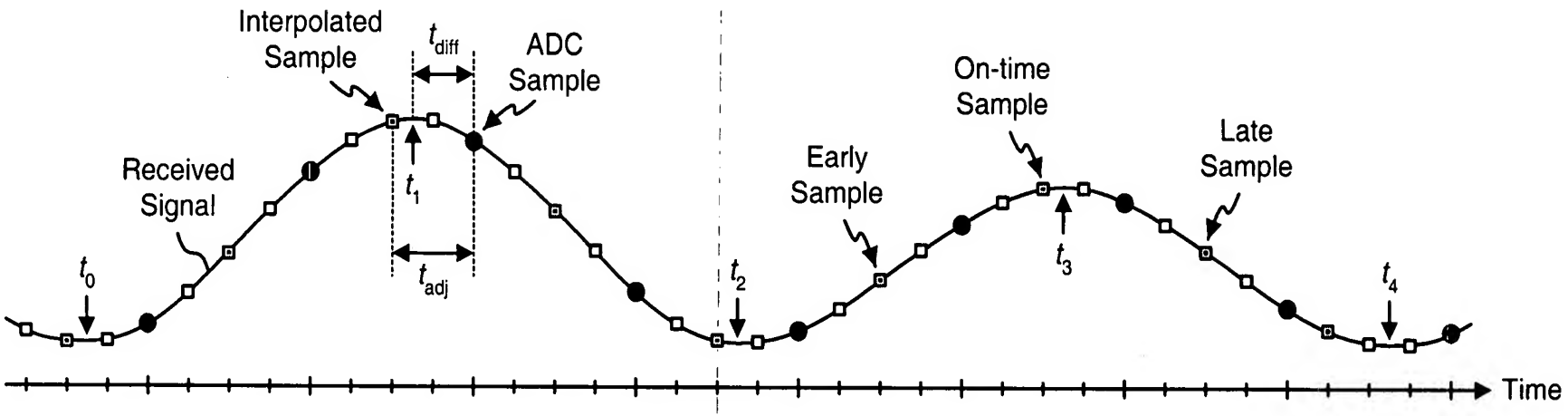
Interpolated Sample
t_{diff}
ADC Sample
Received Signal
t_0
t_1
t_{adj}
t_2
Early Sample
On-time Sample
t_3
Late Sample
t_4
Time

FIG. 3

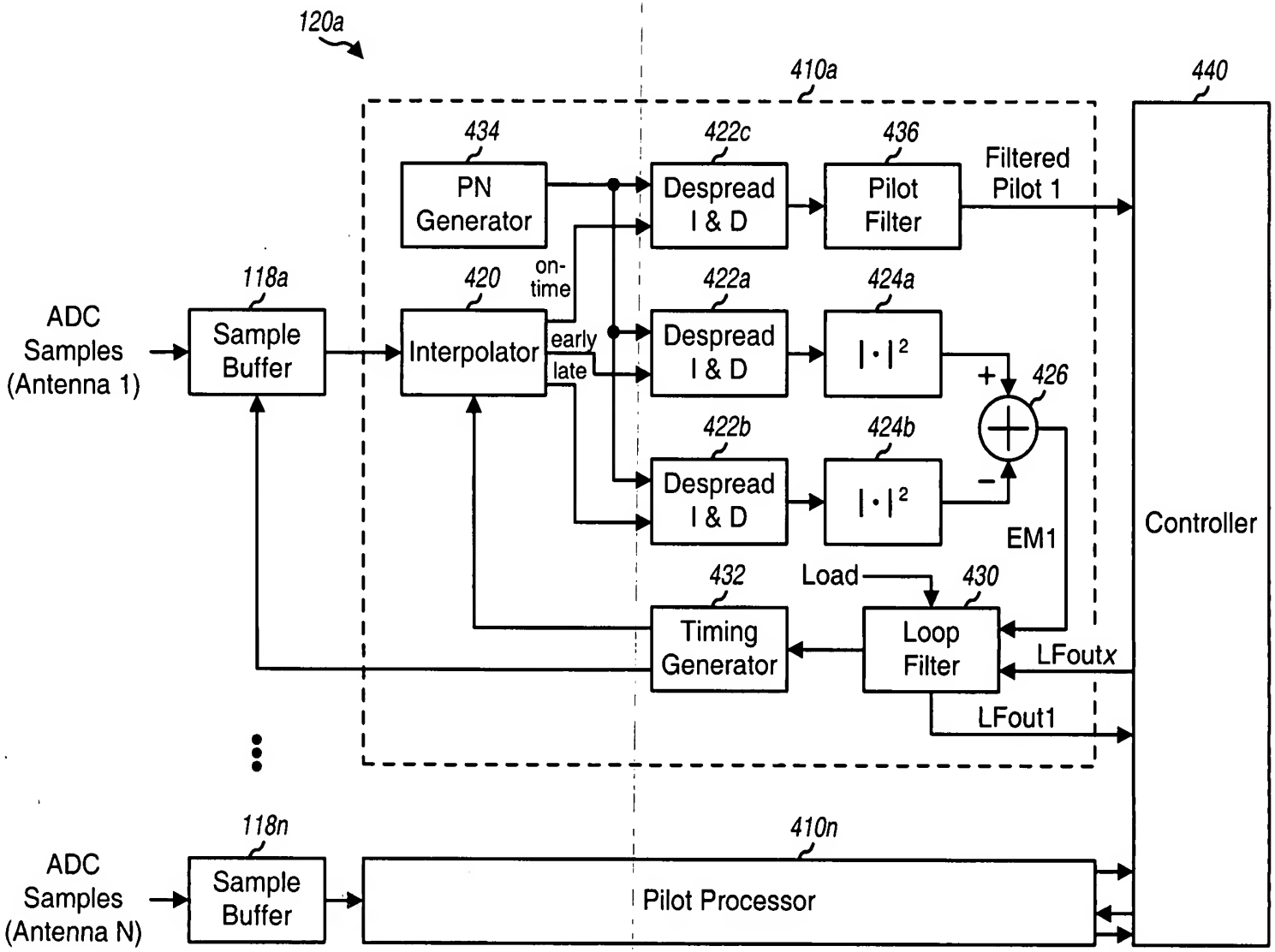
120a
410a
440
434
422c
436
PN Generator
Despread I & D
Pilot Filter
Filtered Pilot 1
118a
420
on-time
422a
424a
ADC Samples (Antenna 1)
Sample Buffer
Interpolator
early
late
Despread I & D
|·|²
426
+
422b
424b
Despread I & D
|·|²
−
EM1
Controller
432
Load
430
Timing Generator
Loop Filter
LFoutx
LFout1
118n
410n
ADC Samples (Antenna N)
Sample Buffer
Pilot Processor

FIG. 4A

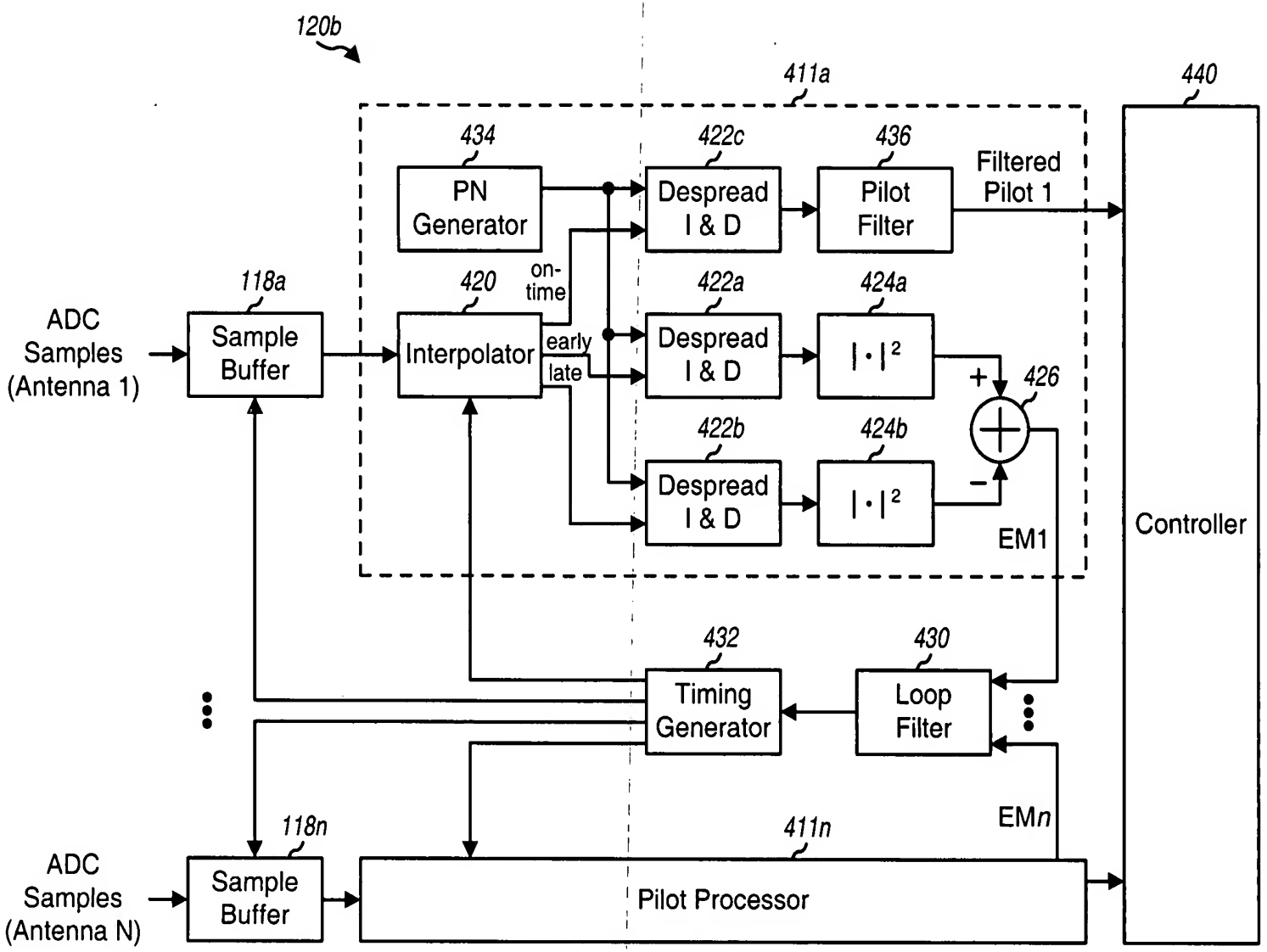
120b
411a
440
434
422c
436
PN Generator
Despread I & D
Pilot Filter
Filtered Pilot 1
118a
420
on-time
422a
424a
ADC Samples (Antenna 1)
Sample Buffer
Interpolator
early
late
Despread I & D
|·|²
426
+
422b
424b
Despread I & D
|·|²
EM1
Controller
432
430
Timing Generator
Loop Filter
EMn
118n
411n
ADC Samples (Antenna N)
Sample Buffer
Pilot Processor

FIG. 4B

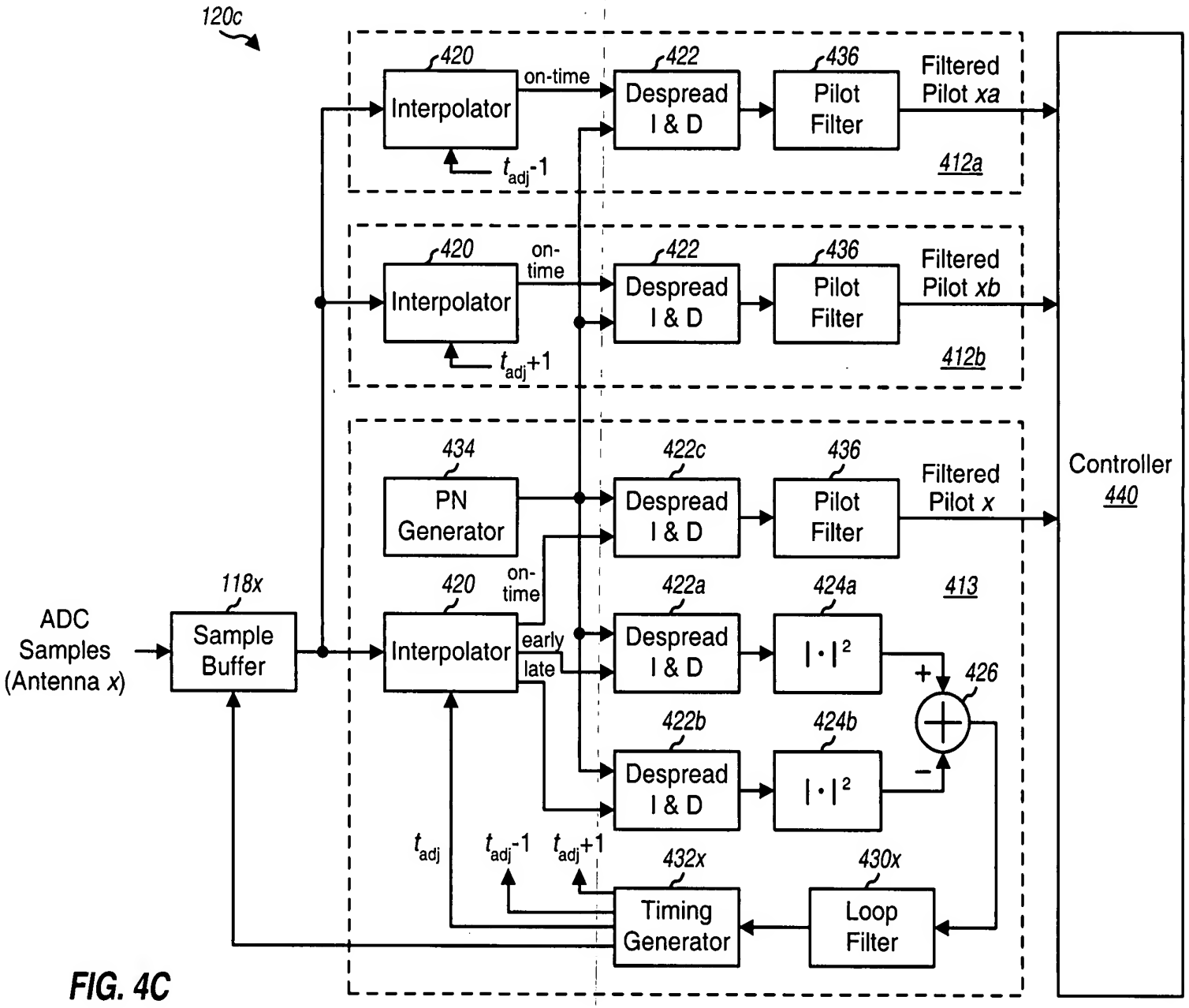
120c
420
Interpolator
on-time
t_{adj}-1
422
Despread I & D
436
Pilot Filter
Filtered Pilot xa
412a
420
Interpolator
on-time
t_{adj}+1
422
Despread I & D
436
Pilot Filter
Filtered Pilot xb
412b
434
PN Generator
422c
Despread I & D
436
Pilot Filter
Filtered Pilot x
Controller 440
118x
ADC Samples (Antenna x)
Sample Buffer
420
Interpolator
on-time
early
late
422a
Despread I & D
424a
|·|²
413
426
422b
Despread I & D
424b
|·|²
t_{adj}
t_{adj}-1
t_{adj}+1
432x
Timing Generator
430x
Loop Filter

FIG. 4C

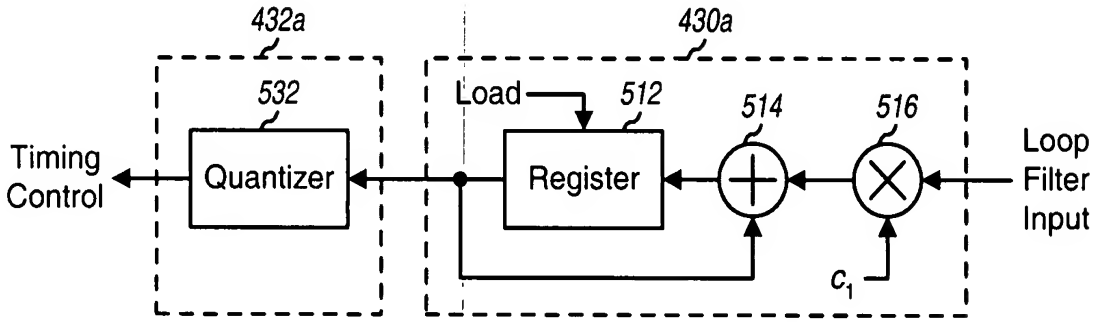

FIG. 5A

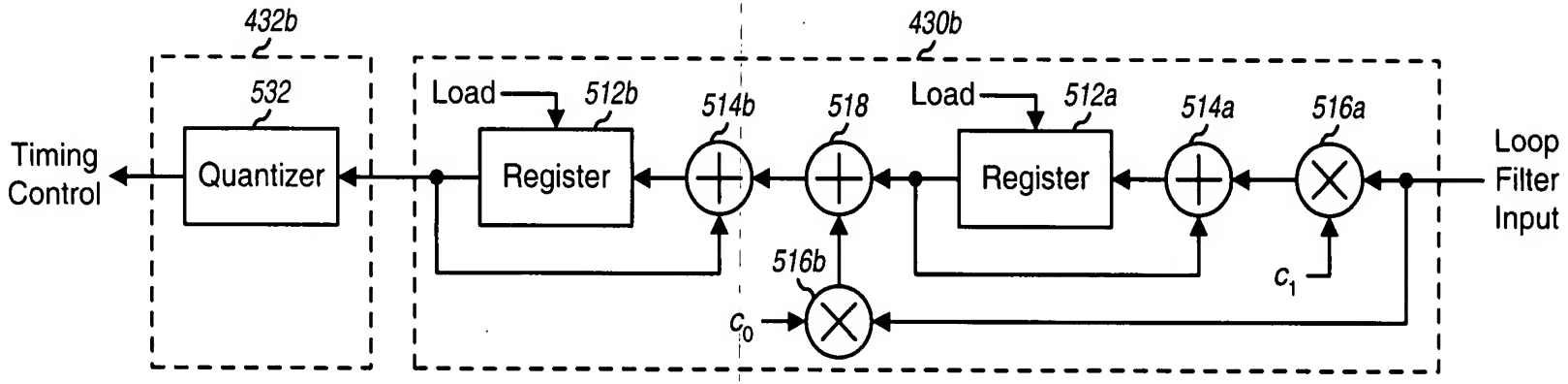

FIG. 5B

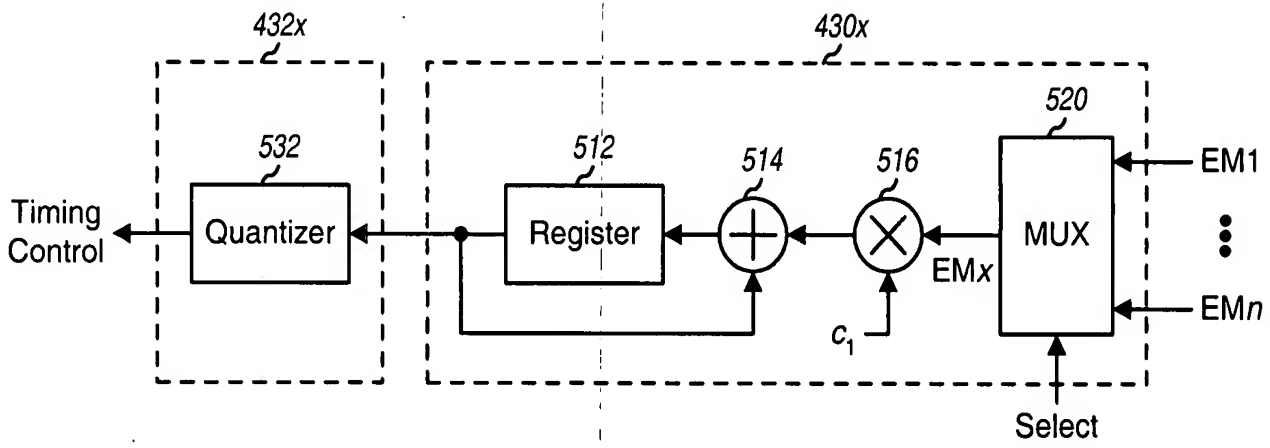

FIG. 5C

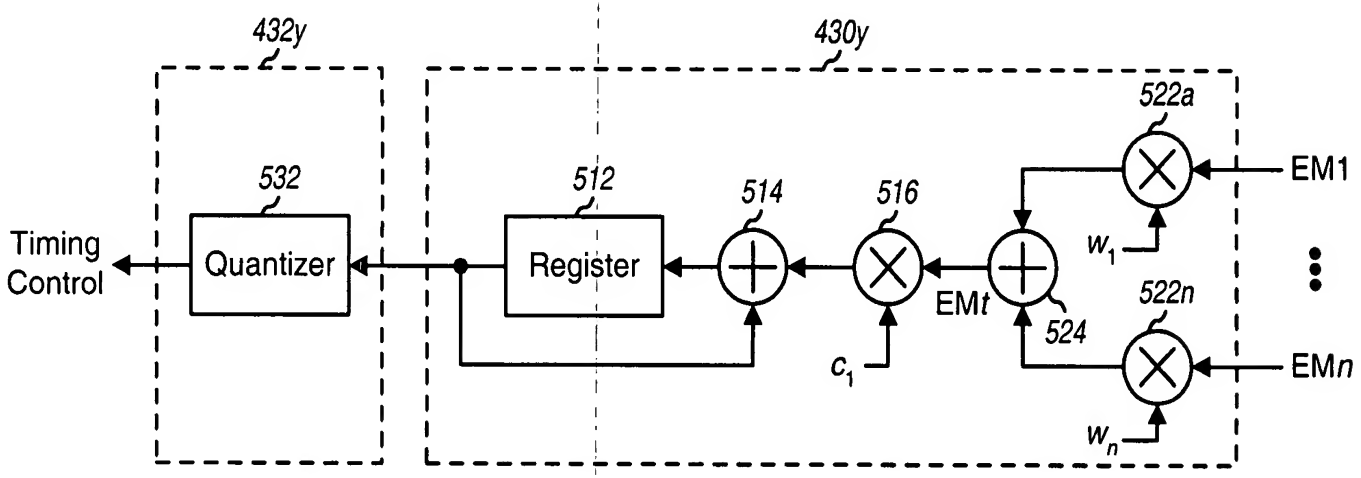

FIG. 5D

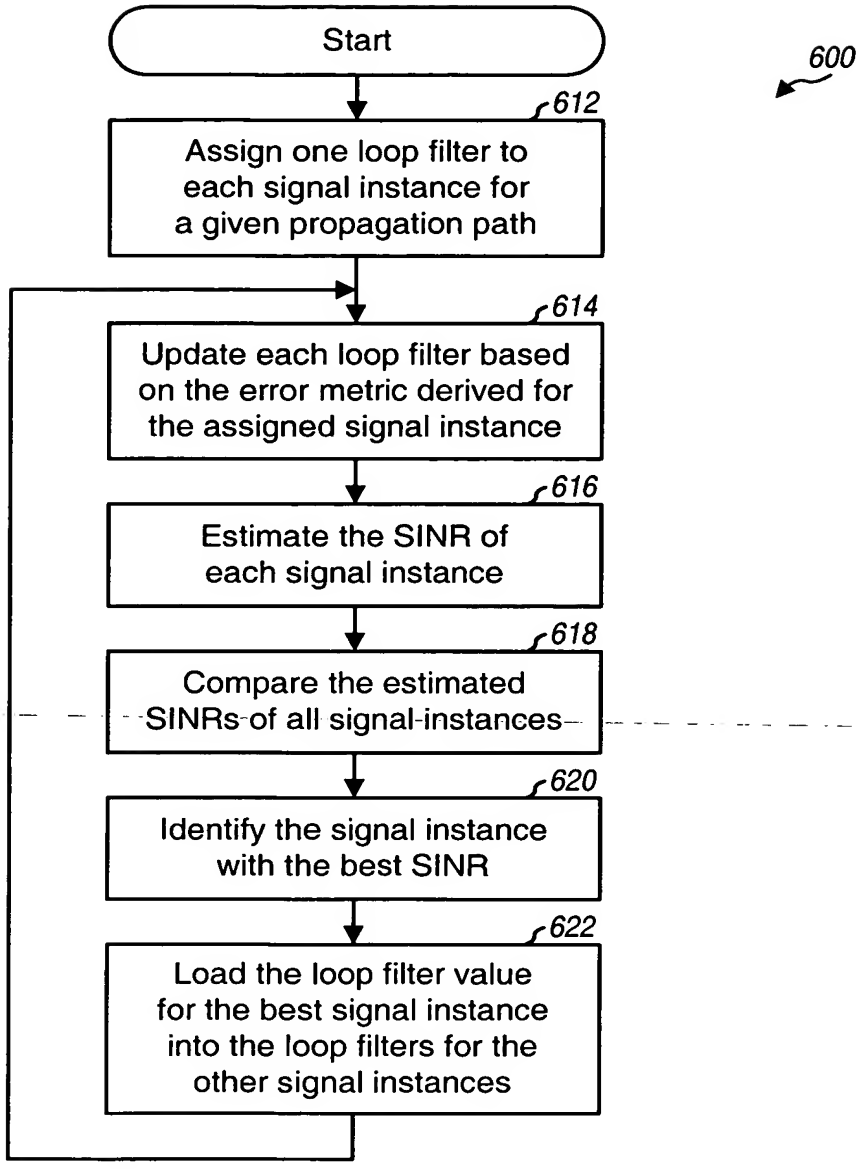
Start
600
612
Assign one loop filter to each signal instance for a given propagation path
614
Update each loop filter based on the error metric derived for the assigned signal instance
616
Estimate the SINR of each signal instance
618
Compare the estimated SINRs of all signal instances
620
Identify the signal instance with the best SINR
622
Load the loop filter value for the best signal instance into the loop filters for the other signal instances

FIG. 6A

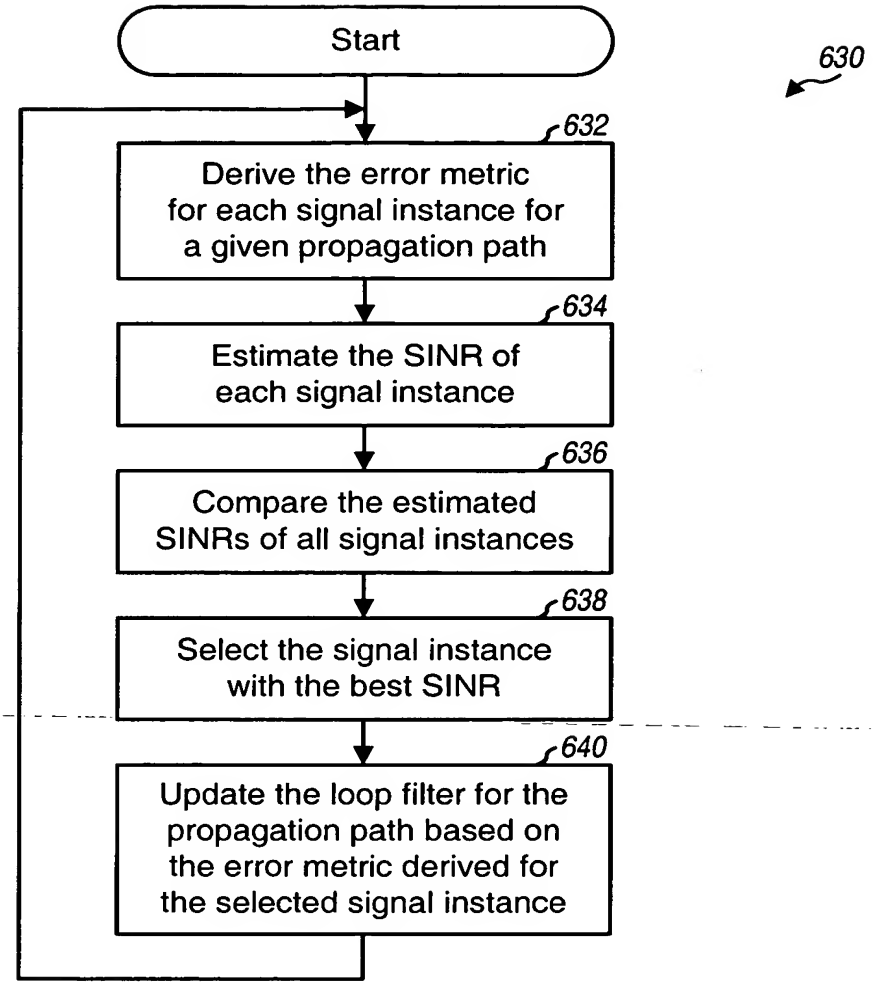
Start
630
632
Derive the error metric for each signal instance for a given propagation path
634
Estimate the SINR of each signal instance
636
Compare the estimated SINRs of all signal instances
638
Select the signal instance with the best SINR
640
Update the loop filter for the propagation path based on the error metric derived for the selected signal instance

FIG. 6B

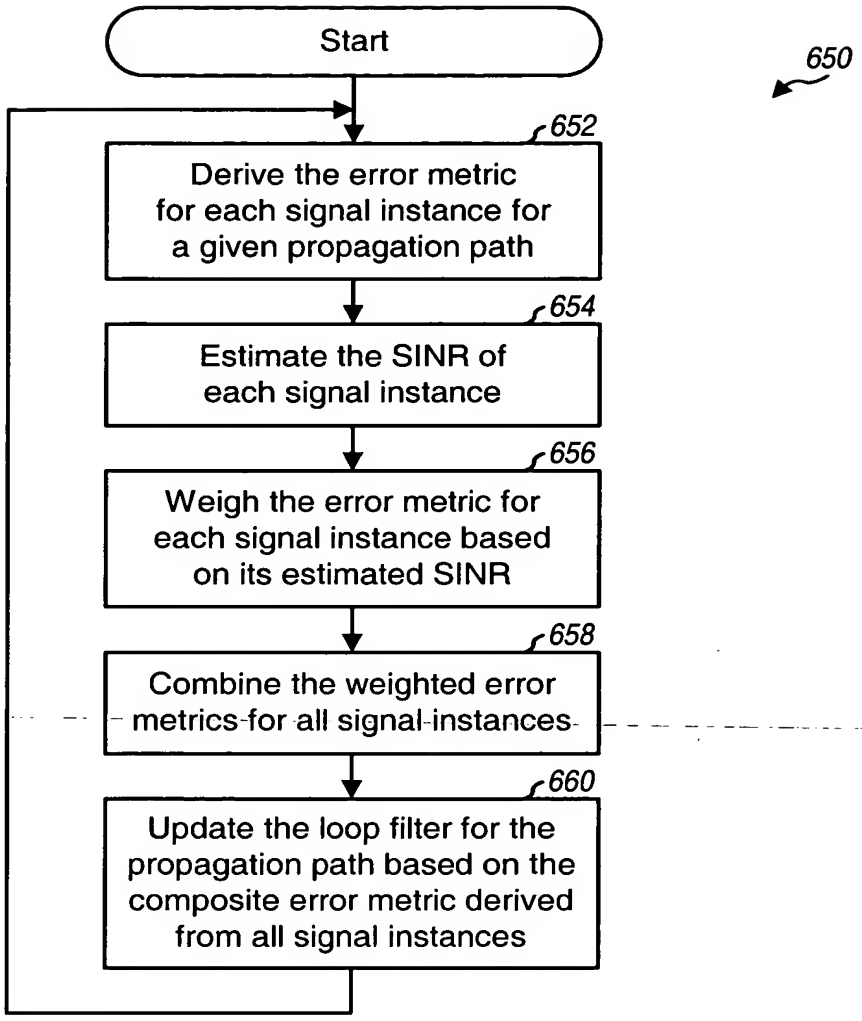
Start
650
652
Derive the error metric for each signal instance for a given propagation path
654
Estimate the SINR of each signal instance
656
Weigh the error metric for each signal instance based on its estimated SINR
658
Combine the weighted error metrics for all signal instances
660
Update the loop filter for the propagation path based on the composite error metric derived from all signal instances

FIG. 6C

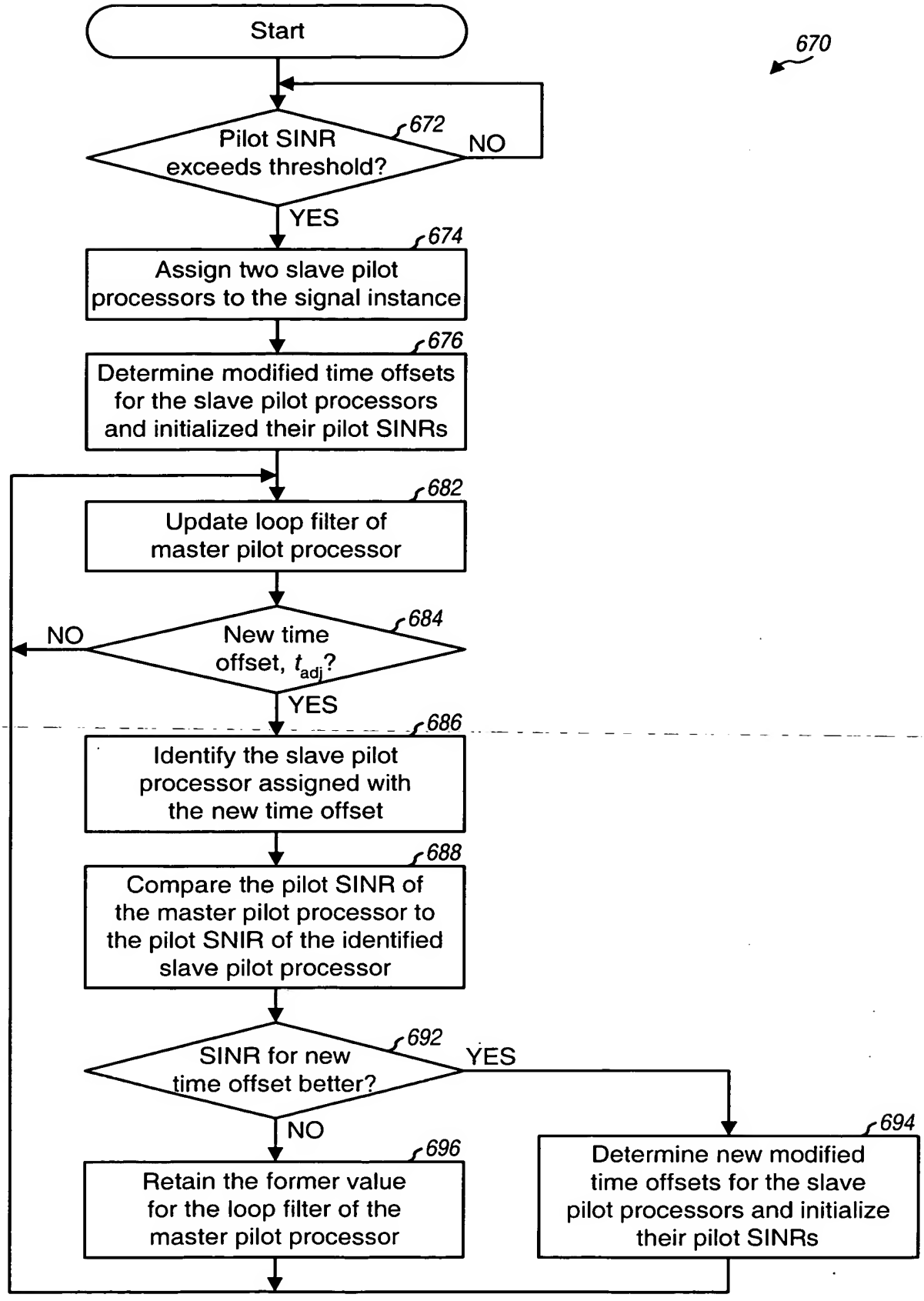
Start
670
672
Pilot SINR exceeds threshold?
NO
YES
674
Assign two slave pilot processors to the signal instance
676
Determine modified time offsets for the slave pilot processors and initialized their pilot SINRs
682
Update loop filter of master pilot processor
684
New time offset, t_{adj}?
NO
YES
686
Identify the slave pilot processor assigned with the new time offset
688
Compare the pilot SINR of the master pilot processor to the pilot SNIR of the identified slave pilot processor
692
SINR for new time offset better?
YES
NO
694
Determine new modified time offsets for the slave pilot processors and initialize their pilot SINRs
696
Retain the former value for the loop filter of the master pilot processor

FIG. 6D